



Roy F. Weston, Inc
Suite 5700
700 5th Avenue
Seattle, Washington 98104-5057
206-521-7600 • Fax 206-521-7601

MEMORANDUM

DATE: 4 November 1998

TO: David Bennett, WAM, U.S. EPA, Region X

FROM: Michelle Turner, Chemist, WESTON, Seattle
rum Roger McGinnis, Senior Environmental Chemist, WESTON, Seattle

SUBJECT: Validation of Total Organic Carbon Analysis Results
Laboratory Batch K9805398
Site: Duwamish River

WORK ASSIGNMENT NO 46-23-0JZZ

WORK ORDER NO.: 4000-019-038-5200-00

DOC. CONTROL NO.: 4000-019-038-AAAK

cc: Bruce Woods, RAP-WAM, U.S. EPA, Region X
Dena Hughes, Site Manager, WESTON, Seattle
Kevin Mundell-Jackson, Database Management, WESTON

The quality assurance review of eight sediment samples, laboratory batch K9805398, collected from the Duwamish River has been completed. The sediment samples were analyzed for total organic carbon (TOC) using EPA Method 9060 by Columbia Analytical Services of Kelso, WA. The samples were numbered:

98334000	98334001	98334002	98334003	98334004
98334005	98334006	98334007		

Data Qualifications

The following comments refer to the laboratory performance in meeting the quality control specifications described in the technical specifications of the laboratory subcontract

This document was prepared by Roy F. Weston, Inc. expressly for the EPA. It shall not be disclosed in whole or in part without the express, written permission of the EPA.

98-0619B 001
DCN 4000-019-038-AAAK

4 November 1998





QA Batch K9805398 (Total Organic Carbon)

Site Duwamish River

Page 2

1. Holding Times

All samples were cooled with ice or refrigerated from the time of collection until analysis. A maximum holding time of 14 days was specified in the Duwamish River Sampling and Analysis Plan. All TOC analyses were performed within 10 days of sample collection.

2. Instrument Detection Limits

All laboratory reporting limits are equal to or less than the project-required detection limits of 200 mg/kg

3 Initial Calibration

A calibration verification check was analyzed prior to sample analysis. Results met control limits of 90 to 110 percent recovery of the true value.

4. Continuing Calibration Verification

Continuing calibration checks were performed initially and after every 10 samples. All results met control limits of 90 to 110 percent recovery of the true value

5. Laboratory Method Blanks

Laboratory method blanks were prepared and analyzed with each batch of samples. No analytes were detected in laboratory method blanks.

6. Laboratory Control Sample

The recoveries for TOC were within the control limits of 80 to 120 percent

7. Laboratory Duplicate Sample Analysis

The relative percent difference (RPD) between duplicate analytical results was within the QC limit of 35 percent

8 Matrix Spike Analysis

Matrix spike recoveries for all analytes met QC criteria of 70 to 130 percent

This document was prepared by Roy F. Weston, Inc. expressly for the EPA. It shall not be disclosed in whole or in part without the express, written permission of the EPA.



QA Batch K9805398 (Total Organic Carbon)

Site Duwamish River

Page 3

9. Field Duplicate Analysis

No field duplicates were associated with this SDG.

10. Sample Analysis

A cursory review of raw data was performed.. No unusual problems were noted, however, triplicate analyses were not performed for this SDG .

11. Laboratory Contact

The laboratory was contacted for additional information regarding initial calibration Per the laboratory, an initial calibration curve is not required by the analytical method and, hence, is not routinely performed Calibration standard verifications are analyzed initially and throughout the analytical sequence

Data Assessment

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers that modify the usefulness of the individual values.

Data Qualifiers

- U - The material was analyzed for, but was not detected.
- UJ - The analyte was not detected. The associated quantitation limit is an estimate because quality control criteria were not met.
- J - The analyte was positively identified, but the associated numerical value is an estimated quantity because quality control criteria were not met or because concentrations reported were less than the quantitation limit or lowest calibration standard.
- R - Quality control indicates that data are unusable (compound may or may not be present). Resampling and reanalysis are necessary for verification.

This document was prepared by Roy F Weston, Inc expressly for the EPA. It shall not be disclosed in whole or in part without the express, written permission of the EPA

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Roy F Weston, Inc
Project: Duwamish River/4000-027-001-2019-38
Sample Matrix: Sediment

Service Request: K9805398
Date Collected: 8/11/98
Date Received: 8/12/98

Carbon, Total Organic

Prep Method NONE
Analysis Method 9060M
Test Notes

Units PERCENT
Basis Dry

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
98334000	K9805398-001	0.05	0.006	1	NA	8/21/98	2.56	
98334001	K9805398-002	0.05	0.006	1	NA	8/21/98	2.12	
98334002	K9805398-003	0.05	0.006	1	NA	8/21/98	2.31	
98334003	K9805398-004	0.05	0.006	1	NA	8/21/98	1.79	
98334004	K9805398-005	0.05	0.006	1	NA	8/21/98	2.07	
98334005	K9805398-006	0.05	0.006	1	NA	8/21/98	1.72	
98334006	K9805398-007	0.05	0.006	1	NA	8/21/98	2.29	
98334007	K9805398-008	0.05	0.006	1	NA	8/21/98	1.84	
Method Blank	K9805398-MB	0.05	0.006	1	NA	8/21/98	0.007	/

M Modified

Approved By

IA/020597p

05398WET LJ1 - Sample 8/25/98

Date

8/25/98

00005

Page No

149T 10/17/98